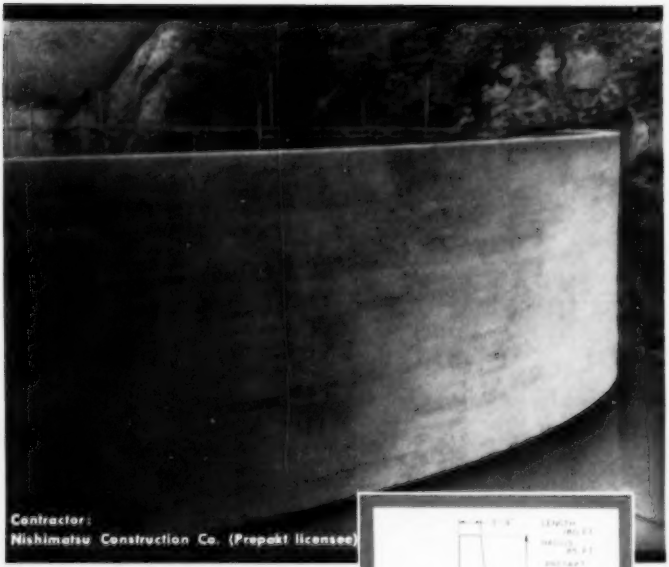
ACI News Letter

Vol. 26, No. 9 JOURNAL of the AMERICAN CONCRETE INSTITUTE May 1955



Contractor:
Nishimatsu Construction Co. (Prepakt licensee)

Tricky water diversion problem solved at Doshi Dam..

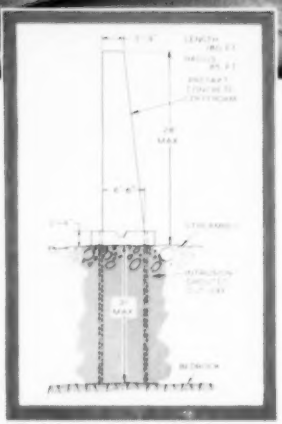
Diverting water during construction of Doshi Dam, Kanagawa Prefecture, Japan, was complicated by rocks and boulders in the streambed which prevented use of sheet piling. An almost inaccessible location in a deep, steep-sided gorge added to the difficulties.

PREPAKT supplied a simplified solution using a PREPAKT concrete cofferdam and an INTRUSION grout cutoff that reduced water leakage to a mere 10 gallons per hour.

The cofferdam was built as a thin, circular arch. PREPAKT concrete, made "in the form" by consolidating preplaced aggregate with INTRUSION mortar, was used because (1) the cofferdam had to withstand overtopping and (2) it was placed before the main concrete plant was set up.

The cutoff was placed in a streambed consisting of boulders filled in with rounded gravel and sand. Procedure was to drill, wash out sand and consolidate gravel with INTRUSION grout. This was done in stages to bedrock producing a cutoff 140 feet long and up to 21 feet deep.

This project is another example of the way economical PREPAKT methods and materials are being used to overcome difficult or expensive construction problems.



(Top) Thin, circular arch cofferdam of PREPAKT concrete diverts water during construction of Doshi Dam in Japan. (Bottom) Diagram of PREPAKT solution to water diversion problem shows how cutoff also provides firm foundation for cofferdam.

CONTRACTORS PREPAKT ENGINEERS

THE PREPAKT CONCRETE CO.
DIVISION OF INTRUSION-PREPAKT, INC.

MAIN OFFICE: CLEVELAND 14, OHIO
CANADIAN OFFICE: TORONTO, ONTARIO

Prepakt maintains a complete field construction organization plus an engineering service and functions as prime or subcontractor. For further information, write: The Prepakt Concrete Co., Room 779-Z, Union Commerce Bldg., Cleveland.

Intrusion and *Prepakt* are trade marks of Intrusion-Prepakt, Inc. Intrusion-Prepakt methods and materials are covered by U.S. Pat. 2313110, 2655004, 2434302 and others, also patents pending.

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ACI

News Letter Contents

May 1955

On the Cover—Roof construction at British European Airways hanger, London Airport, England. Hanger features sectionally precast, prestressed beams 110 ft long and knife-edge thin. Designed by the main contractors Holland & Hannen and Cubitts, Ltd., in collaboration with Concrete Development Co., Ltd., and Prestressed Concrete Co., Ltd. Architect Keith Murray. Consulting structural engineers—A. E. Beer and Scott & Wilson.—*Courtesy Cement and Concrete Assn. (London)*

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ACI FINANCES

In 1954, plans of the Board of Direction for increased staff and new services were substantially materialized. Despite a higher level of operations through the addition to the staff of Paul F. Rice as Technical Director and one general staff member and heavier than usual printing expenses it was possible, through increased membership and advertising revenues, to add a moderate amount to the Institute's reserves. The following statement reflects the status of the General Fund at the end of 1954.

GENERAL FUND ASSETS, LIABILITIES, AND RESERVE

Assets

Cash on hand Dec. 31, 1954		
National Bank of Detroit	33,010.60	
Wabeek State Bank of Detroit	6,009.68	
Petty cash	29.50	39,049.78
Investment in U. S. Government Bonds	117,500.00	
Lease deposit	3,300.00	
Gold Seal Account, Michigan Bank	10,000.00	130,800.00
TOTAL ASSETS		$169,849.78

Liabilities

Accounts payable	16,724.47	
Reserve for Detailing Manual	3,271.19	
Refunds due to customers	647.25	
TOTAL LIABILITIES		20,642.91

Reserve

Reserve Dec. 31, 1953	124,661.54	
Excess receipts over expenditures, 1954	24,545.33	149,206.87
TOTAL LIABILITIES AND RESERVE		$169,849.78

Other funds of the Institute, set aside for such special purposes as staff retirement, awards, and revisions to the Detailing Manuals are as follows:

SUMMARY OF OTHER FUNDS

ACI Retirement Fund	38,682.95
Reserve for Detailing Manual	3,271.19
Turner Award Trust Fund	2,772.13
Alfred E. Lindau Award Fund	4,294.87
TOTAL OF OTHER FUNDS	$ 49,021.14

Continued on p. 4

1954 in retrospect

In 1954, receipts from member dues and JOURNAL advertising gained over 1953 while receipts from sales of publications registered a decline due mainly to the unavailability of revised editions of the *ACI Manual of Concrete Inspection* and the *Reinforced Concrete Design Handbook*. However, total receipts for the year ($183,600) exceeded those of 1953 by $5,700. Salaries, printing (JOURNAL and special publications), and travel represented the principal increases in expenditures during the year with total expenditures exceeding those of 1953 by $16,500.

Plans for 1955

Anticipating normal growth in membership, improvement in publications sales because of new publications, and a continued good showing in advertising it is expected that revenue for 1955 will be about 4 percent above 1954. Additional expenses because of increased staff, more pages in each JOURNAL issue, publication of the biennial *Directory*, and increased travel expenses in connection with the program of area meetings will require expenditures exceeding those of 1954 by 17 percent. These increases in services to members will come close to absorbing the difference between anticipated receipts and expenditures although first quarter, 1955, operations indicate a very moderate addition to reserves at year end.

Winter concreting symposium

A symposium on winter concreting theory and practice will be held in Copenhagen, Denmark, Feb. 13-18, 1956. The meeting will be sponsored by the Danish section of RILEM (Union of Testing and Research Laboratories of Materials and Structures).

Anyone wishing to contribute is asked to submit unpublished contributions to the organizing secretary by Aug. 15, 1955. (Organizing Secretary, RILEM Symposium 1956, c/o The Danish National Institute of Building Research, 20, Borgergade, Copenhagen K, Denmark.) Additional information can be obtained from the organizing secretary.

Included in the tentative program is the paper "Resistance of Concrete to Frost at Early Ages," by T. C. Powers, Portland Cement Assn., Chicago.

Ethel B. Wilson

Ethel B. Wilson, a long-time member of the ACI staff and well known to many Institute members, died May 2 after a long illness. Mrs. Wilson joined the Institute staff in 1923 and for many years she and Harvey Whipple, late Secretary-Treasurer, comprised the entire full-time staff of the Institute. Devoted effort through the difficult times of the early thirties aided in laying the ground work for the later growth of the Institute. With expansion of staff to meet increasing need for services, Mrs. Wilson capably assumed greater responsibilities, and prior to her death was assistant treasurer and advertising manager. Most ACI members will probably remember her friendly and efficient handling of registration at the annual conventions.

Jelley president of SAME

Rear Admiral Joseph F. Jelley, Jr., was installed as president of the Society of American Military Engineers at its 35th annual meeting May 5-7.

Admiral Jelley, a member of the ACI Board of Direction, is director of the Pacific Division of the Bureau of Yards and Docks, and Officer in Charge, Tenth Naval Construction Brigade at Pearl Harbor. He is former director of construction, Department of Defense, and former chief of the Bureau of Yards and Docks of the Navy Department.

Floating "casting yard" cuts costs of precast roadway bridge slabs

Two major construction innovations by which the builders of the $3.5 million Dauphin Island Bridge across Mississippi Sound from the Alabama coast are cutting corners and costs are:

1. Precasting the 34-ft reinforced concrete roadway slabs in reusable steel forms specially constructed on barges so that the slabs set and cure en route to the bridge site.

2. Utilizing fiberboard forms for encasing the steel bearing pilings below and above the waterline with concrete.

The 4.4-mile structure includes 2.165 miles of steel and concrete bridge and a 210-ft lift span. Remainder of the project is bulkhead fill and roadways across Sand Island, Little Dauphin Island, on Dauphin Island, and the Alabama mainland.

Barge-cast slabs

Designed for H-15-44 AASHO loading, the roadway slabs are 29 ft wide, carrying a 24-ft roadway, two 6-in. curbs, and two 2-ft sidewalks.

In all there will be 342 barge-cast slabs in the bridge and three slabs will be cast in place. The slabs are 34 ft long—the Alabama Highway Department's standard length for reinforced concrete deck girders.

Slabs are set on 23 ft 3 in. concrete caps 3 ft wide at the top, 2 ft at the bottom, and 2 ft deep, cast on four-pile bents of 10-in. 42-lb steel bearing piles reinforced with structural steel sway braces above the waterline.

Development of the barge-mounted forms, into which truck-mixed concrete is placed 27 miles from the bridge site, was worked out by the contractor and Irvington Form and Tank Co., who built the 10-gage sheet steel forms. Use of the ingenious forms built on the barges eliminates the problems of setting up a casting yard and casting in forms on shore, of rehandling slabs onto barges for delivery to the site, and eliminates the hazards of concreting in place in an open stretch of Gulf water intermittently subjected to sudden and severe blows and storms.

Six barges are used on the job and three 29 x 34-ft slabs, each weighing 65 tons, are cast on each barge (Fig. 1) by Radcliff Gravel Co. at its main waterfront plant on the Mobile River in Mobile. In all, 9890 cu yd will be placed, with 85½ cu yd to a barge.

The mixing trucks make a short run of about 75 ft from the batching bins to dockside with a 4 to 6 min interval for mixing. A crane handles the 1-cu yd laydown concrete bucket between the trucks and the barges. Slabs are screeded and belted and cured with clear curing compound.

The concrete mix developed by the Alabama Highway Department, calls for the following proportions per cu yd: cement, 541 lb; fly ash, 135 lb; 3 percent entrained

Fig. 1—One of the special barges equipped with re-usable steel forms into which roadway slabs are cast approaches the bridge. Three slabs are cast on each barge. In all, 342 of the 29 x 34-ft slabs will be cast on these barges

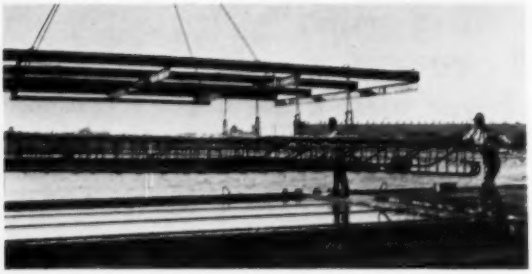


Fig. 2—Reinforcing cage is lowered into barge forms for the roadway slabs. After concreting the barge is towed 27 miles to the bridge site

air; water, 38.9 gal.; sand, 1094 lb; and gravel, 1728 lb.

The form clean-up starts as soon as a slab is lifted out of a barge at the bridge site; turn-around time for a barge is about nine days. Slabs are set in place five to six days after casting.

Steel reinforcement for the precast roadway slabs is tied into cages in special false forms on the bank of the Mobile River and the entire cage for one slab is lifted from the false form and lowered into place on the barges by crane (Fig. 2). The barges are then towed to the Radcliff plant where the concrete is placed.

At the bridge site a slab-placing traveler, designed specially for the project and equipped with a hoist travels on its own tracks as the bridge grows, reaches down between the pile bents and connects its lifting beams to eight lifting eyes screwed into coil anchors cast into the slab (Fig. 3).

Just before the hoist takes the load, air pressure is applied through large diameter hoses placed under the soffits to break the bond and pop the slabs loose from the forms. The hoist lifts the slab above the level of the roadway, it is revolved through 90 deg and lowered into place on the concrete caps. In this way it is possible to get the barges between the bents which are 34 ft apart.

First one end slab, then the other, and finally the center slab are lifted from the barge, in that order, so that the barge remains as nearly level as possible during the lifting operation. Average time for lifting and setting a slab in place is 50-55 min, including drilling holes and placing dowel pins in the caps on the fixed end of each slab. Curbs are cast after the slabs are placed.

Fiberboard forms for piling encasement

Secret of the piling encasement procedure is a job-developed air and water jetting device which permits seating each concrete encasement 2 ft below the ground line which varies from 1 to 16 ft below the waterline. Development of the device made it more efficient and economical to use the 20-in. diameter circular encasements than the standard 16-in. square encasements.

Each Sonotube fiberboard form is fitted with a wood bottom shaped to fit the H-shaped piling. The form is then set in the jetting cage which extends 2 ft below the bottom of the tube and which has six jets. The ground line is sounded and the jetting cage, form, and reinforcing spiral slipped over the upper end of the piling.

Fig. 3—Hoist on special traveler lifts 65-ton roadway slab from barge and lowers it into place on the concrete caps. After all three slabs are lifted out, forms are cleaned and barges return to concreting site on shore

Marion, Indiana Sewage Treatment Plant. Engineer—Consoer, Townsend & Associates, Chicago, Illinois; Contractor—Steigerwald & Borchert, Milwaukee, Wisc.

Temple Isaiah, Los Angeles, Calif. Archt.—Kenneth N. Lind, A.I.A.; Struc. Engr.—Brandow & Johnston; Contr.—Zimmer Construction Co.; Sub Contr.—Vagtborg Construction Co.—all of Los Angeles, Calif.

POZZOLITH

in concrete for quality control

Shown here are three of many important structures built since 1932 in which Pozzolith improved engineers' control of concrete quality.

Barrett-Lick Garage, San Francisco, Calif. Structural Engineers—Ellison and King; General Contractor—Barrett and Hilp;—both of San Francisco, Calif.

"For a given set of materials and water-cement ratio, the unit water content (water required per cubic yard of concrete) is the most important basic factor affecting the quality of concrete". ACI Committee 613, 1944 report, Page 655.

"The most efficient concrete is that which contains the least amount of water and cement compatible with sufficient workability and adequate quality". Bureau of Reclamation current Concrete Manual, Page 269.

In all types of structures, Pozzolith helps engineers maintain lowest possible unit water content, closely control entrained air . . . consistency . . . rate of hardening . . . costs.

Any one of our 70 skilled field technical men can detail the advantages of Pozzolith for your project.

THE MASTER BUILDERS CO.

CLEVELAND 3, OHIO — Subsidiary of American-Marietta Company — TORONTO, ONTARIO

Encasement concreting begins with the bottom of the fiberboard form just above the waterline and the weight of additional concrete carries the device to the bottom as concreting continues, consequently, all concrete is placed in the dry. A mandrel trips the jetting cage as it reaches the ground line and when the full encasement, its length predetermined by the sounding, has been concreted it is topped off 1 ft above the waterline and the jetting cage is recovered.

Presence of sway braces makes it more efficient to place the remaining part of the encasing concrete, which reaches to within 1 ft of the top of the piling, as a second operation since the circular forms must be slit and notched to fit these braces (Fig. 4). The fiberboard tubes are easily cut with an electric circular hand saw, fitted over the sway bracing, and then clamped with $1\frac{1}{4}$-in. iron ratchet type column clamps, into position around the pilings.

Another advantage claimed for the fiberboard forms is that they eliminate external curing and they also keep the fresh concrete from exposure to sea water. The contractors believe they have successfully solved the problems that heretofore prevented use of such forms for underwater construction despite their obvious advantage for such work over square encasing forms.

Concrete for the piling encasements and the caps is placed from concrete barges working at the site.

Credits

Blount Brothers Construction Co., Montgomery, Ala., and Kansas City Bridge Co., Kansas City, Mo., are joint contractors to the Alabama Highway Department for construction of the structure.

The bridge was designed by the Alabama Highway Department, John W. Chambers, chief bridge design engineer, and construction is under the control and inspection of the department with Fred A. Robison in charge of the state's staff at the site.

Frank W. Currey is general superintendent of construction for Blount Brothers-Kansas City Bridge, Russell Thompson is field superintendent, W. D. Tryon is project engineer, Bruce Johnson is officer engineer, F. W. Dushane is office manager, W. W. Morton is master mechanic, S. S. Smith is carpenter superintendent, and H. H. Naylor is superintendent of slab casting.

Fig. 4—Placing concrete in 20-in. diameter fiberboard forms to encase upper part of pilings. Job-developed jetting device simplified underwater concreting. Concreting above waterline was separate operation since forms had to fit around sway bracing on piling

Plan ASTM annual meeting

A wide range of subjects relating to research and testing of engineering materials will be discussed at the 58th annual meeting of the American Society for Testing Materials to be held at Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-July 1, 1955. A total of 30 sessions are now scheduled. Six symposiums are scheduled on the following subjects: impact, judgment factors in soils testing, significance of tests of concrete, high purity water corrosion, speed of testing, and metallic materials for service above 1600 F. In addition, sessions are scheduled at which individual papers will be given on the subjects of soils, nonferrous metals, steel, testing of materials, and fatigue.

Important in the society's activities are the large number of technical committee meetings which are scheduled. Forty-five committees and their subcommittees will hold a total of about 450 meetings.

Why Batch Away YOUR PROFITS?

Midwest Supply Company finds New Heltzel Automatic Cement Plant with Batchmaster Batcher has perfect record in dispensing 40,000 barrels

Boardman Supply Co., Youngstown, O., checked the record after batching some 44,000 bbls. of cement through their Heltzel Combination Plant. The record; a 15 bbl. plus—the result of the overage cement producers normally provide in their shipments. What makes this story even more amazing is the fact that Boardman was batching small amounts (600 lb. average) on a 5000 lb. scale.

As for speed, Boardman can weigh out 5½ yards of dry material, and the necessary water in 14 seconds—discharge it in 17 seconds. As for handling savings, they can put together all materials necessary for batching a yard of concrete for less than four and one-half cents.

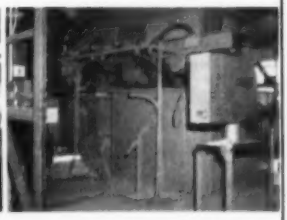
This story can be duplicated whether your needs are for a single or a multiple material plant, stationary or portable, for yard or highway use. Why not make sure you have the fastest, most accurate equipment possible. Don't chance losing time and profits with inferior equipment. Specify Batchmaster Plants by Heltzel.

The Heltzel Steel Form & Iron Co.
29000 Thomas Road, Warren, Ohio

HELTZEL *Batchmaster* **BATCHING PLANTS**

Special loading hoppers on a rolling track for three separate discharging heights, including a dry batch collecting hopper for dispensing to batch boxes. Water is introduced simultaneously.

A single operator controls entire operation of filling plant, measuring and dispensing. He can weigh all materials, including water and discharge 5½ yards of concrete in 30 seconds.



Compact Batchmaster Batchers for both aggregate and cement. Cement Batcher is sealed. Aggregate Batcher features air-operated clamshell gates. Sealed weighing apparatus has automatic recording device.

Positions and Projects — ACI Members

Recent appointments to ACI technical committees

Included in this list are *new* appointments only.

Committee 115, Research

Leo M. Legatski
University of Michigan

W. R. Lorman
U. S. Naval Civil Engineering Research and Evaluation Laboratory

Ray B. Crepps
Owens-Illinois Fiberglas Corp.

W. N. Angus
Princeton University

Committee 207, Properties of Mass Concrete

I. L. Tyler, Chairman
Portland Cement Assn.

Committee 208, Bond Stress

Chester P. Siess, Chairman
University of Illinois

Committee 209, Volume Changes and Plastic Flow in Concrete

J. M. Raphael, Chairman
University of California

C. A. Willson
American Iron and Steel Institute

W. R. Waugh
Office Chief of Engineers

Committee 213, Lightweight Aggregate and Lightweight Aggregate Concrete

Irwin A. Benjamin
Granco Steel Products Co.

Committee 214, Evaluation of Results of Compression Tests of Field Concrete

Delmar L. Bloem
National Sand and Gravel Assn.

Thomas B. Kennedy
Waterways Experiment Station

R. J. Elfert
U. S. Bureau of Reclamation

Committee 314, Rigid Frame Bridges

Daniel Frederick
Virginia Polytechnic Institute

Committee 318, Standard Building Code

E. I. Fiesenheiser
Illinois Institute of Technology

Theodore C. Reyner
Michigan College of Mining and Technology

Committee 323, Prestressed Concrete

Sterling L. Bugg
U. S. Naval Civil Engineering Research and Evaluation Laboratory

Committee 611, Inspection of Concrete

Woodrow L. Burgess
Office Chief of Engineers

A. N. Kulberg
Southern California Edison Co.

Joseph J. Waddell
Palmer and Baker

Tedesko moves to New York

Anton Tedesko recently moved to New York to take over the duties of manager of the structural department, Roberts and Schaefer Co., Engineers, and share in the management of Thompson-Starrett Engineering Associates, Inc. Mr. Tedesko was manager of the structural department of Roberts and Schaefer Co.'s Chicago office.

Wisely is secretary of ASCE

William H. Wisely has succeeded William N. Carey as executive secretary of the American Society of Civil Engineers.

Mr. Wisely has been associated with the field of sanitary engineering and was most recently executive secretary and editor for the Federation of Sewage and Industrial Wastes Assns.

Hubler to retire

J. W. Hubler, head, Department of Civil Engineering, Washington University, St. Louis, has resigned effective June, 1955, to accept the position of consulting engineer with Macomber, Inc., steel fabricators, Canton, Ohio.

Professor Hubler has been a member of ACI since 1938. He is a member of ACI Committee 318, Standard Building Code.

SIKA

STOPS LEAKS FAST . . . AND SIMPLY, TOO

Sika can seal leakage through any concrete structure against pressure. The Sika method is quick, sure and long-lasting.

Here is all you do.

1. Hack and clean surface.
2. Mix quick-setting Sika liquid and portland cement.
3. Use Sika No. 4A mortar for sealing seepage and diverting water to bleeder holes. (For air-placed mortar use Sigunit.)
4. Use Sika No. 2 mortar (sets in 20 seconds) to plug bleeders.
5. After sealing all leaks, apply a protective cement coat over entire surface.

For 30 years Sika compounds and methods have helped solve concrete and masonry problems ranging from the production of high quality concrete to the sealing of joints or cracks subject to severe movement and pressure.

Additional Sika compounds cover the following specific problems: TO SEAL LEAKS AGAINST PRESSURE, TO SEAL JOINTS OR CRACKS, TO REPAIR NON-LEAKING SURFACES, TO REPAIR STRUCTURAL EXTERIORS, TO PLACE GUNITE OR PRESSURE GROUT, TO PRODUCE HIGH QUALITY CONCRETE.

Ask Sika's Engineers for details and recommendations.

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He is also consulting engineer for the Steel Joist Institute, Washington, D. C.; a member of the building code committee of the City of St. Louis; president of the Missouri Society of Professional Engineers; and chairman of the Civil Engineering Division of the American Society for Engineering Education.

Yike cement consultant for Dewey and Almy

Daniel W. Yike was recently appointed as a sales manager for J-W Materials, Inc., Napoleon, Ohio, and as a cement consultant for Dewey and Almy Chemical Co., Cambridge, Mass., division of W. R. Grace & Co. J-W Materials is a distributor for Dewey and Almy. As cement consultant on cement mill products, Mr. Yike will work principally in Mississippi, Alabama, Georgia, South Carolina, and Tennessee.

Looking ahead to 1956

With the successful completion of the 1955 convention in Milwaukee, ACI's Technical Activities Committee is already looking toward the 1956 meeting in Philadelphia and planning the program.

All those who have in mind offering papers for presentation at the 52nd annual meeting should write to Institute headquarters no later than July 1, furnishing a synopsis which should make clear the intended scope of the paper and indicate features that, in the opinion of the author, will justify its inclusion in the program. Contributors should be prepared to have first drafts of manuscripts in the hands of the Technical Activities Committee for appraisal and acceptance by Sept. 15, 1955, and final manuscripts by Jan. 1, 1956.

From the replies received and suggestions from other sources, TAC will select the papers to make up each convention session. Write Institute headquarters about that contribution *you* believe merits a place on the program.

Porter and Urquhart in new firm

O. J. Porter & Co. and L. C. Urquhart, who have been associated with B. E. Beavin, Sr., since 1953 under the name of Porter, Urquhart, and Beavin announced recently that they will continue their consulting engineering business under the name of Porter, Urquhart, McCreary, and O'Brien with offices in Newark, New York, San Francisco, Sacramento, Los Angeles, and Fremont, Ohio.

Bruce D. McCreary will be in charge of the San Francisco and Sacramento offices and Kenneth H. O'Brien will remain in the same capacity in the Los Angeles office. A. C. Perkins will continue as project engineer in the Ohio office.

Mr. Beavin, has opened an office in Baltimore as a consulting civil engineer and will be associated with the above firm on joint ventures or as consultant on certain projects in Maryland and vicinity.

Texas ready-mix group elects officers

Thomas L. Amis, president, Wamix, Inc., Dallas, was elected president of the Texas Ready Mixed Concrete Assn.

Other new officers include Alvin Kelso, Galveston, first vice-president; and J. T. Suggs, Freeport, second vice-president. New directors are Charles Marshall, Fort Worth; Dan Parker, Houston; Tom C. Foley, Wichita Falls; Watson Palmer, Harlingen. Hold-over directors are Floyd Childs, Abilene, and past president, Jim Motheral, Austin.

New department at Owens-Illinois

The organization of a new department to conduct long-range fundamental research on the structure and surface of glass at the new technical center of the Owens-Illinois Glass Co., which is nearing completion in Toledo, was announced recently.

The group, to be known as the Physical Chemistry and Solid State Physics Department, is under the direction of Dr. George L. Kalousek and includes Dr. M. Dank, Dr. J. Francl, S. W. Barber, and J. S. Logiudice.

The department will concentrate almost exclusively on long-range objectives in glass research without responsibility for solving everyday problems that may occur in glass-making techniques.

Sonotube

FIBRE FORMS
for round columns of concrete

Coliseum, Charlotte, N. C. A. G. Odell, Jr. and Associates, architects Thompson and Street, contractors

Round columns speed the work . . . cut costs!

. . . low cost SONOTUBES make it possible

In Charlotte's Coliseum, round columns formed with SONOTUBES were used as the supporting elements for the elevated floor and arena-type sloping seat-deck.

Varying heights of the columns, clearly visible in the photo, are obtained by merely sawing the fibre forms to required lengths on the job.

SONOTUBES save time, labor and money . . . easily handled because they require minimum bracing. Low cost SONOTUBE Fibre Forms provide a fast, economical method of forming round columns of concrete.

Approved by architects and engineers, widely used by contractors everywhere. In 26 sizes, from 2" to 36" I.D. up to 50' long.

See our catalog in Sweet's

For complete technical data and prices, write

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AKRON, IND. — BRANTFORD, ONT.

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MEXICO: Sonoco de México, S. A., Apartado 10239, México, D. F.

Who's Who This Month

G. W. Washa, J. C. Saemann, and C. Warren

"Effect of Curing on the Properties Affecting Shrinkage Cracking of Concrete Block," p. 833, was collaborated on by G. W. Washa, J. C. Saemann, and C. Warren.

Professor Washa, associate professor of mechanics, University of Wisconsin, Madison, is the author of numerous ACI papers. He received the Wason Medal for noteworthy research for work reported in his 1940 paper, "Comparison of the Physical and Mechanical Properties of Hand-Rodded and Vibrated Concrete Made with Different Cements."

He was a member of the ACI Board of Direction, 1948-50, and recently was re-elected to that post. He is chairman of ACI Committee 213, Properties of Lightweight Aggregates and Lightweight Aggregate Concrete; secretary of Committee 115, Research; and a member of Committee 609, Compaction of Concrete by Mechanical Means.

Professor Washa graduated from the University of Wisconsin in 1930 with a BS in civil engineering; received his PhD from the same university in 1938. He has been actively engaged in research work for a number of years at the university.

Mr. Saemann is an instructor in the Mechanics Department, University of Wisconsin. He received his BS in civil engineering and MS in mechanics from the University of Wisconsin and presently he is completing work on his PhD degree.

Upon leaving the U. S. Navy in 1946 he joined the Mechanics Department at the University of Wisconsin where he has worked on several projects dealing with concrete masonry. Mr. Saemann is a member of Chi Epsilon and Sigma Xi, and is a registered professional engineer in Wisconsin.

Dr. Warren is employed by the Goodyear Atomic Corp., Portsmouth, Ohio. He received a BS in civil engineering from the University of Wisconsin in 1948 and was an instructor in the Mechanics Department in 1948-49. In 1950 he discontinued teaching to devote more time to study and research. He conducted work on shrinkage cracking of concrete masonry units and developed a method for analyzing the voids in hardened concrete. The results of his work in the latter field were presented at the 1953 meeting of the Highway Research Board and were published by that organization.

In the latter part of 1951, Dr. Warren completed work on his PhD degree at the University of Wisconsin. Shortly thereafter he accepted a position with the General Electric Co. at the Atomic Energy Commission's Hanford plant near Richland, Wash. While with General Electric he worked on problems associated with nuclear reactor design, including development work on high density concrete for use as radiation shielding. Since June, 1953, Dr. Warren has been employed by the Goodyear Atomic Corp., operator of the Portsmouth, Ohio, gaseous diffusion plant for the Atomic Energy Commission.

Karl V. Steinbrugge and Donald F. Moran

"Performance of Reinforced Concrete and Concrete Masonry in Recent Western United States Earthquakes," p. 853, is the offering of Karl V. Steinbrugge and Donald F. Moran, structural engineers, Pacific Fire Rating Bureau.

Mr. Steinbrugge, after graduating from Oregon State College in civil engineering in 1941, was employed by various consulting engineering and construction firms located on the Pacific coast. During 1947-50 he was on the staff of the School Section of the California Division of Architecture which reviews the design of all new public school construction in California to insure safety and minimum property damage when subjected to strong earthquakes.

Mr. Steinbrugge has been in charge of the San Francisco Earthquake Department of the Pacific Fire Rating Bureau since 1950. This organization establishes insurance rates for earthquake as well as for fire. The organization has made extensive investigations after recent strong earthquakes in the United States.

Mr. Moran graduated from the University of California in 1939 with a BS in civil engineering. He has had 10 years' experience in structural design including 4½ years in the U. S. Army Corps of Engineers, and 5 years with the Pacific Fire Rating Bureau as structural engineer in charge of the Los Angeles Earthquake Department.

Much of his present work consists of checking the adequacy of all types of structures for earthquake resistance and probable damage as well as detailed field work following strong earthquakes. Presently he is teaching a graduate course on earthquake and blast resistant design at the University of California, Los Angeles.

Mr. Moran and Mr. Steinbrugge have written numerous articles on earthquake resistive design, earthquake damage, and earthquake insurance.

R. H. Evans and A. S. Parker

"Behavior of Prestressed Concrete Composite Beams," p. 861, is co-authored by R. H. Evans and A. S. Parker, University of Leeds, England.

Professor Evans is a professor of civil engineering and during the last 25 years has specialized on research investigations dealing with various aspects of plain, reinforced, and prestressed concrete. Research work on prestressed concrete was started in 1938 with particular emphasis on distribution of bond stress in prestressed concrete beams and on the ultimate strength of prestressed concrete beams.

Dr. Evans is a member of ACI-ASCE Committee 326, Shear and Diagonal Tension. He has been chairman and a member of committees of the Yorkshire branches of the Institutions of Civil and Structural Engineers.

Mr. Parker studied civil engineering at the University of Leeds, England, and was awarded a BS degree in 1950. During 1950-51 he pursued research work on the behavior of prestressed concrete composite beams and was awarded an MS degree in July, 1951. During the last 4 years he has been acquiring practical training and experience in various fields of engineering.

J. W. Kelly and Milos Polivka

"Ball Test for Field Control of Concrete Consistency," p. 881, is contributed by J. W. Kelly and Milos Polivka, professor and assistant professor, respectively, University of California, Berkeley.

Professor Kelly graduated from Purdue University in 1921. For 2 years he was engaged in waterworks engineering. Then, after a brief term as assistant in the testing materials laboratory, Purdue University, he joined the staff of the Portland Cement Assn. where he remained for 7 years. Following a summer of field research and inspection for the National Sand and Gravel Assn., he returned to Purdue University where, as concrete specialist of the engineering extension department, he prepared a practical booklet on concrete making for the small user of cement. In 1931 he joined the staff of the University of California.

Professor Kelly has been an ACI member since 1926 and is chairman of ACI Committee 611, Inspection of Concrete. He was a member of the ACI Board of Direction from 1952-54.

Professor Polivka received a BS degree in 1944 and an MS degree in 1948 from the

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University of California. Since 1944 he has been engaged in research on concrete and grouting at the Engineering Materials Laboratory, University of California. In 1948 he joined the faculty in his present capacity as assistant professor.

He is an active member of ASCE Committee on Grouting and of ASTM Committee C-1 on Cement. He is a member of Sigma Xi and has been an ACI member since 1944.

Earl I. Brown, II

Earl I. Brown, II, head professor, Department of Civil Engineering, Alabama Polytechnic Institute, Auburn, writes about "Strength of Reinforced Concrete T-Beams Under Combined Direct Shear and Torsion," p. 889.

Professor Brown graduated from Virginia Military Institute in 1940 and worked for awhile as an instrument man with the Tennessee Valley Authority. Later he worked as assistant to the division engineer of the Indiana Division of the Cleveland, Cincinnati, Chicago and St. Louis Railroad.

After serving in the armed services in 1942-46, he worked as field engineer and advisor of construction for L. E. Wooten, consulting engineer, Raleigh, N. C. In 1949 he began a teaching career in the Department of Civil Engineering at North Carolina State College. Since then, he has also taught in the School of Civil Engineering, Georgia Institute of Technology.

In 1949 Professor Brown was awarded his MS in civil engineering by North Carolina State College; in 1953 he received his PhD in civil engineering from the University of Texas.

Dr. Brown is a registered engineer in Alabama, Georgia, and North Carolina, and holds memberships in ACI, ASEE, ASCE, International Assn. for Bridge and Structural Engineering, Sigma Xi, Chi Epsilon, and the Alabama Education Assn.

G. M. Bruere

"Air Entrainment in Cement and Silica Pastes," p. 905, is presented by G. M. Bruere, member, Division of Industrial Chemistry, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia.

In 1945 Mr. Bruere received his MS degree from Canterbury University College of the University of New Zealand, and in 1946 was elected as an associate of the Royal Institute of Chemistry, London.

For 2 years Mr. Bruere worked as a district soil chemist for the New Zealand Department of Scientific and Industrial Research. He joined the Division of Industrial Chemistry at the end of 1947 where he has been engaged in investigating the functions of surface-active agents in concrete.

Lu-Shien Hu

"Eccentric Bending in Two Directions of Rectangular Concrete Columns," p. 921, is authored by Lu-Shien Hu, bridge designer, Hardesty and Hanover, consulting engineers, New York.

Dr. Hu, born in China, came to the United States in 1948 for advanced studies in structural engineering. In 1949 he received his MS in engineering and in 1952 his DSc degree, both from the University of Michigan, majoring in structures.

From 1951-52, Dr. Hu worked as a research associate in the Engineering Experiment Station, University of Michigan, on research on ultimate strength of steel structures. From 1952 to February, 1955, he worked as a bridge designer for Howard, Needles, Tammen, and Bergendoff, consulting engineers, New York.

Operating changes at Atlas

L. J. Boucher retired recently as plant manager of Universal Atlas Cement Co.'s Northampton, Pa., plant. He was succeeded by Raymond W. Smith, former assistant plant manager.

Martin E. Linquest retired as plant manager of the company's Duluth, Minn., plant and has been succeeded by R. W. Nygaard, former assistant plant manager at Buffington, Ind. Sidney C. Englin has taken over Mr. Nygaard's duties at Buffington.

Herbert W. Dieckmann was appointed assistant general chemist in the firm's New York office. Mr. Dieckmann was the assistant plant manager at Leeds, Ala.

Robert G. Watson was appointed technical service manager at the firm's New York office succeeding G. E. Elsenhans.

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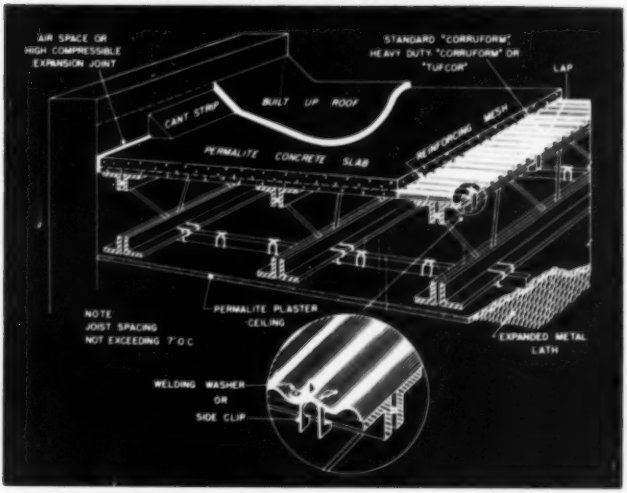

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New Members

The Board of Direction approved 74 Individual applications, 13 Juniors, and 11 Students, making a total of 98 new members. Considering losses due to resignations, deaths, and nonpayment of dues the total membership on April 1 was 6840.

Individual

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AMBAGTSHEER, WILLEM HERMAN (Reinf. Concr. Designer, Anglo Transvaal Cons-Inv. Coy, Ltd., Johannesburg, South Africa)

ANTILLON C., FEDERICO, Obregon Sonora, Mexico (Antillon y Fernadez, Engrs. & Contrs.)

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BERRONG, HARTRIDGE J., Atlanta, Ga. (Mgr. & Field Lab. & Testing, Georgia Testing Labs.)

BERSWICK, WILLIAM, Seattle, Wash. (Physical Lab. Mgr., Pittsburgh Testing Lab.)

BETANCOURT, A., LUIS MANUEL, Zuila, Venezuela (Field & C. E., Compania Shell de Venezuela)

BLACK, JOSEPH T., JR., Albuquerque, N. M. (Constr. Engr. & Concr. Specialist, Albuq. Distr., U. S. Army Corps of Engrs.)

BOGUSLAVSKY, BORIS W., Atlanta, Ga. (Prof. in Charge of Arch. Engrg., Georgia Inst. of Tech.)

BURGESS, S. W., Toronto, Canada (Charge of Sales, Air-Entraining Agent, Proctor & Gamble Co.)

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New ASTM specifications

New ASTM specifications C332-54T and C331-53T covering vermiculite concrete aggregate were issued recently detailing density, insulation value, grading, and other qualities. These new specifications, plus C330-53T, replace former ASTM C130-42, written in 1942.

Under C332-54T the dry weight of vermiculite concrete aggregate ranges from a minimum of 6 lb per cu ft to a maximum of 10 lb per cu ft. This produces concrete weighing from 15 to 50 lb per cu ft with insulation values ranging from 0.45 to 1.50, depending on the mix.

Specification C331-53T was written to provide a specification for lightweight aggregate used in concrete masonry units. C330-53T was specifically written for lightweight aggregates for structural concrete with a minimum compressive strength of 2000 psi.

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June 13-18, 1955—St. Louis Convention, American Society of Civil Engineers, Jefferson Hotel, St. Louis, Mo.

June 20-24, 1955 — Annual Meeting, American Institute of Architects, Hotel Radisson, Minneapolis, Minn.

June 20-24, 1955—63rd Annual Meeting, American Society for Engineering Education, Pennsylvania State University, State College, Pa.

June 26—July 1, 1955—Annual Meeting, American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J.

October 31—November 1, 1955—Atlanta Regional Meeting American Concrete Institute, Atlanta Biltmore Hotel, Atlanta, Ga.

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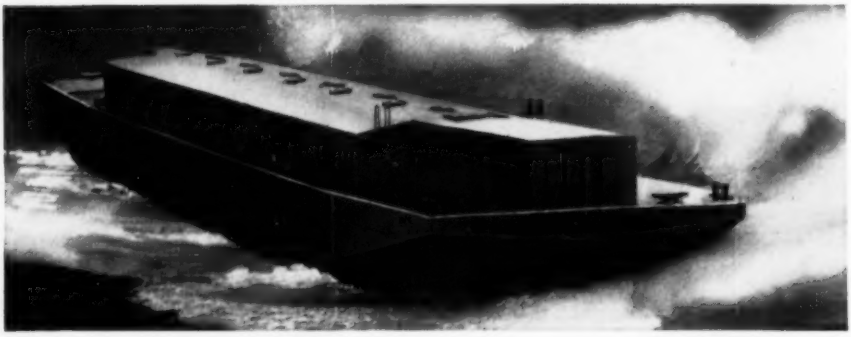

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ERRATA

The following equations and tabular values should be substituted for the corresponding equations and tabular values in "Ribless Cylindrical Shells," by Mario G. Salvadori and A. D. Ateshoglou, in the January ACI JOURNAL.

These changes are on pp. 459 and 460; they were suggested by B. Wedell and checked by the authors.

The changes in Eq. (9) do not affect the corresponding tabular values.

$$M_d = \frac{1}{\pi^2/2 - 4}\left[\frac{\pi}{2} - (\pi^2/2 - 4)\,\phi \sin\phi + (\pi^2/4 - 4)\cos\phi\right] p_o r^2 \quad (9)$$

$$M_a = \frac{1}{\pi}\,(\phi\cos\phi - \tfrac{1}{2}\sin\phi)\,p_o r^2 \quad (10)$$

$$M_T = \frac{1}{6(\pi^2/2 - 4)}\,(2 - \pi\cos\phi)\,\alpha\, TEt^2/r \quad (11)$$

$$M_T = \frac{1}{3\pi}\,(\cos\phi)\,\alpha\, TEt^2/r \quad (15)$$

TABLE 1—FIXED SHELL

	V_{o1}/pr	H_o/pr	M_o/pr^2	M_1/pr^2	M_{max}/pr^2	M_{max}/pr^2	
						Value	Location ϕ, deg
p_r	+0.159	+0.500	+0.159	0	+0.159	+0.070	37
	$V_{oT}/\alpha TEt^2$	$H_{oT}/\alpha TEt^2$	$M_{oT}/\alpha TEt^2$	$M_{1T}/\alpha TEt^2$	$M_{max}/\alpha TEt^2$	$M_{max}/\alpha TEt^2$	
						Value	Location ϕ, deg
$+T$	0	+0.560	+0.356	+0.204	+0.356	+0.204	0, 90

TABLE 2—HINGED SHELL

	$V_{oT}/\alpha TEt^2$	$H_{oT}/\alpha TEt^2$	$M_{oT}/\alpha TEt^2$	$M_{1T}/\alpha TEt^2$	$M_{max}/\alpha TEt^2$	$M_{max}/\alpha TEt^2$	
						Value	Location ϕ, deg
$+T$	0	+0.106	+0.106	+0.106	+0.106	+0.106	90

* * * *

The following correction should be made in "Flat Slab Solved by Model Analysis," by Gerald Bowen and R. W. Shaffer, in the February ACI JOURNAL.

p. 566—The sentence which begins four lines below the heading "Placement of Reinforcing Steel" should read: "Bar sizes and lengths thus determined in Table 1 and the resisting moment of Presan versus M_u reinforcement are shown graphically in Fig. 6b."

* * * *

The following corrections should be made in "An Interpretation of Some Published Researches on the Alkali-Aggregate Reaction. Part 1—The Chemical Reactions and Mechanism of Expansion," by T. C. Powers and H. H. Steinour in the February ACI JOURNAL.

p. 497—below the heading "Introduction," the sixth line, "not" should be changed to "now." In the 14th line, "now" should be changed to "not."

* * * *

The following corrections should be made in "Balanced Design of Prestressed Concrete Beams," by Henry J. Cowan in the April ACI JOURNAL.

p. 773—in the sixth line below "Introduction," change "f_{cB}" to "f_{cp}." In Eq. (3) and (4) change "M_S" to "M_L."

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p. 774—in the first line from the top change "M_S" to "M_L;" in the second line change "F_u" to "ηF_u."

p. 775—in Eq. (16), change "$f_t Z_t$" to "$f_t Z_b$."

p. 777—in Eq. (a), change "eF_c" to "eF_u." In the second and third lines *above* the heading "Balanced Design with Variable Working Stresses," change "F_c," which appears three times, to "F_u." In Eq. (21), (22), and (23) change all "F_c's" to "F_u."

p. 778—in Eq. (24) change both "F_c's" to "F_u."

p. 779—in the second equation in the last paragraph delete "$\dfrac{3{,}600{,}000}{2440}$."

p. 780—in Eq. (a) change "eF_c" to "eF_u." In the sixth paragraph, the third and fourth lines, change "... top flange $b_t = 0.7$; $b = 8.39$ in." to "... top flange $b_t = 0.7b = 8.39$ in." and change "... thickness of the rib $b' = 0.5$; $b = 5.99$ in." to "... thickness of the rib $b' = 0.5b = 5.99$ in." In the first line *above* "Conclusion" change "2130 sq in." to "2.130 sq in."

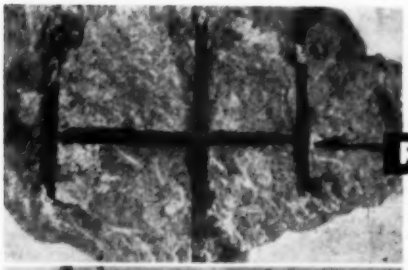
Honor Roll

February 1—March 31, 1955

Again W. H. Armstrong heads the Honor Roll, and this time with 11 credits. Glenway Maxon, Jr., has second place honor having proposed four applicants for membership in ACI thus far this year.

BE ALIVE IN '55! Expand ACI by sponsoring new members who will benefit through affiliation with YOUR Institute.

W. H. Armstrong	11
Glenway Maxon, Jr.	4
Jose L. Capacete	3
J. W. Kelly	3
Henry L. Kennedy	3
W. D. Kimmel	3
Joaquin Spinel L.	3
R. A. Burmeister	2
M. A. Craven	2
Samuel Hobbs	2
R. G. King	2
Albert Litvin	2
Phillip L. Melville	2
Howard Simpson	2
Mete Sozen	2
Benjamin A. Wasil	2



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CRSI award to Di Stasio & Van Buren

The firm of Di Stasio & Van Buren, consulting engineers, New York, was given the 1955 Award of the Concrete Reinforcing Steel Institute for its contribution to the advancement of reinforced concrete construction.

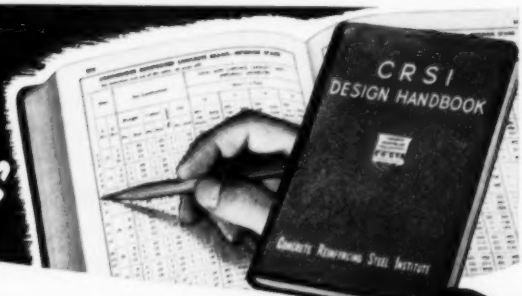
The award was made in recognition of the firm's pioneering and development of the flat plate system—a type of reinforced concrete construction which provides unusual economy and flexibility of design.

The evolution of the flat plate system dates back to the early 1930's. Di Stasio & Van Buren worked out a formula for two-way slab systems which was incorporated in the ACI Building Code in 1936. Endeavoring to refine the method still further, the firm developed what is now known as flat plate. The system was first used in four apartment buildings in Brooklyn.

The CRSI Award is administered by representatives appointed by ACI, Associated General Contractors of America, and ASCE. The 1955 award committee consisted of Chairman Vernon P. Jensen, manager of betterments, C. F. Braun & Co., Alhambra, Calif. (ACI); Earl J. Wheeler, president, Frank Messer & Sons, Inc., Cincinnati (Associated General Contractors); and Prof. H. J. Gilkey, Head of the Department of Theoretical and Applied Mechanics, Iowa State College, Ames, Iowa (ASCE).

(l. to r.) Maurice P. Van Buren and Joseph Di Stasio receiving the 1955 CRSI Award from Vernon P. Jensen, award committee chairman

HOW TO DESIGN A REINFORCED CONCRETE MEMBER IN 30 SECONDS



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Prepared by The Committee on Engineering Practice

Awarded Certificate of Merit, 1954 Building Products Literature Competition, sponsored by the American Institute of Architects and the Producers' Council, Inc.

CONCRETE REINFORCING STEEL INSTITUTE
38 SOUTH DEARBORN ST., CHICAGO 3, ILL.

Soviet program pushes prefabricated concrete

The fact that Russia is going to have a building boom was reported recently in *Architectural Forum*. It will not be the voluntary business-and-consumer-kind that the United States has known for the past decade; Russia's construction surge will occur by government and party fiat.

Several months ago, Party Secretary Nikita S. Khruschchev ordered an end to the skyscraper era of Russian architecture and decreed simplification and standardization of building methods. Soviet architects and builders wondered what shape their future works would take.

They found out recently as they moved among new display buildings of prefabricated, reinforced concrete units at Moscow's Permanent All-Union Building Exhibition. There were wall panels, pillars, beams, floors, and window frames, all made of concrete and all interchangeable, using steel only where pillars and beams must be welded together, and using no wood at all. There was ornamentation, the Russian architects discovered prefabricated exterior slabs of ceramic tile, mass-produced decorative columns, plaques, and door frames. Plumbing, and even radiators, special interests of former pipe-fitter Khrushchev, were integrated into slabs.

The Soviet plan will sprinkle all of Russia with standardized factories, apartments, buildings, and public structures for the next 5 years, at least. It calls for a 500 percent increase in production of prefabricated concrete building units, a 150 percent boost in cement output, and recruitment of vast construction brigades. Some 100,000 Russian youths already were being recruited to operate factories making precast concrete units.

Turner promotes Lutz

Godfrey Lutz has been appointed director of construction research for Turner Construction Co., New York. He has been with Turner since 1933.

Bound volumes needed

An ACI member wishes to purchase bound copies of ACI *Proceedings* Vol. 40 and 41. These volumes are no longer available from ACI headquarters. Anyone who no longer needs these volumes and wishes to sell them should write to ACI headquarters. The Institute will purchase a limited number of them for $2.50 per copy. Do not send the volumes, however, until notified to do so.

Second international prestress congress

The Second Congress of the Fédération Internationale de la Précontrainte will be held in Amsterdam, Netherlands, Aug. 29-Sept. 2, 1955, in the Royal Tropical Institute. Main topics of the congress will be: function of grouting and anchorages in the behavior of prestressed elements; experiences and problems concerning the manufacture and the use of steel for prestressing; progress of precast prestressed work in the factory and of the assembling, by prestressing on the site, of precast units; moment distribution in statically indeterminate prestressed structures, beyond the elastic phase; influence of plasticity on the strength and instability of prestressed thin shells; comparative analysis of specifications and codes of practice on prestressed concrete used in various countries; and economical advantages of prestressed concrete in various countries. Simultaneous translations will be given during all sessions.

Numerous inspection tours will be offered to places of technical interest in the area.

ACI headquarters has a limited supply of the tentative program which gives complete information of arrangements to date. Copies will be sent on request.

Slab-on-ground construction study

The Building Research Advisory Board, under a contract between the National Academy of Sciences and the Federal Housing Administration, has undertaken a study of slab-on-ground construction for houses. The purposes of the study are (1) to define and analyze the problems of slab construction to provide answers for problems where satisfactory information exists, and (2) to define problems requiring further research. Among questions to be answered will be those concerned with insulation, moisture migration, and design.

Research projects compiled by Committee 115

As part of its assignment, Committee 115 has compiled its annual list of current research projects. The 1955 compilation is divided into three parts. The first part gives the names of all educational institutions that are carrying out concrete research and lists the projects that they are working on. The second part provides similar information for noneducational organizations. In the third part the projects are classified under subject headings. The reporting organizations listed 548 different projects under way.

For those who did not secure a copy of the compilation at the Milwaukee convention, additional copies are available from ACI headquarters.

Tools, Materials, Services

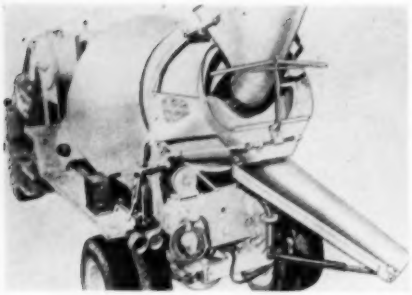
Under this heading note will be made from time to time of producer literature of presumed technical interest (and available from its source for the asking) to ACI users of tools, equipment, materials, accessories, and special services.

Sandwich panel construction

"Foamglas in Thin Wall and Sandwich Panel Construction," a 12-page brochure published by Pittsburgh Corning Corp., offers information on cellular glass insulation in sandwich panel type of construction.—Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22, Pa.

Building industry compilation

Building Research Institute has published "Associations and Societies of the Building Industry in the States." Booklet is a listing of groups whose interests dictate a concern with the advancement of building technology and the consequent expansion of markets for the products and services of the building industry. Price is $1.—Building Research Institute, 2101 Constitution Ave., Washington 25, D. C.



Hydraulic control

An automatic hydraulic control for elevating the discharge chute on transit-mix trucks, Dyna-Chute hydraulic control is being marketed by Monarch Road Machinery Co. and is available for 6- or 12-volt electrical systems. The control combines pump, motor, oil reservoir, and solenoid in one unit. A hydraulic ram attached to the bottom of the chute controls the movement.—*Monarch Road Machinery Co., 1331 Michigan, N. E., Grand Rapids 3, Mich.*

Soil testing machine

Tinius Olsen Testing Machine Co. is producing the Olsen K-W triaxial testing machine. It incorporates all controls necessary for routine and triaxial shear testing of soil. Three models are available, 100-, 250-, and 500-lb capacities.—*Tinius Olsen Testing Machine Co., 5027 Easton Rd., Willow Grove, Pa.*

Cement bulletin

Medusa Portland Cement Co. has published a new section to its looseleaf catalog. The bulletin offers information on proportioning and mixing concrete using Type III cement.—*Medusa Portland Cement Co., 1000 Midland Bldg., Cleveland 15, Ohio.*

Concrete coloring

Tammms Industries, Inc., is producing Dust-On, a cement and flint hard aggregate compound with oxide colors that is floated into fresh concrete. It is available in six colors.—*Tamms Industries, Inc., Chicago, Ill.*

Bonding material

A plastic material, Inlayerete Bond, is being marketed by The Garland Co. It is said to bond concrete to almost any building material.—*The Garland Co., Cleveland, Ohio.*

Grout estimator

A pocket-size card for estimating grout requirements of heavy equipment, machinery, anchor bolts, building columns, and bridge seats has been offered by The Master Builders Co. Front side of card lists Embeco pre-mixed grout yield and estimating figures for 100 lb, a cubic yard of flowable grout, and 100 sq ft of flowable grout 1 in. thick. Use of pea gravel in the grouting mix is discussed. On reverse side a four-point estimating procedure is given.—*The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.*

Anchor slot

Gateway Engineering Co. is producing the Dovetail Anchor Slot, a device for forming dovetail grooves in concrete. The galvanized sheet steel slot is filled with chemically treated Kraft fiber.—*Gateway Engineering Co., 3233 West Grand Ave., Chicago 51, Ill.*

Adjustable scaffolding

Morgen Manufacturing Co. is now marketing its adjustable scaffolding in 19-ft heights. This is in addition to the 12-ft heights already available. Scaffolding has a triple platform for masons, tenders, and materials and is moved up mechanically with the job.—*Morgen Manufacturing Co., Yankton, S. D.*

Concrete saw

Felker Manufacturing Co. has announced its latest Di-Met Masonry Saw. It incorporates a collar designed to provide more water to the blade, the blade is constantly enveloped in water; a spindle quill includes the spindle, all ball bearings, and a series of special slingers to prevent water entry, and facilitates removal for spindle repairs; and a simplified height adjustment.—*Felker Manufacturing Co., 1128 Border Ave., Torrance, Calif.*

Heater

An infra-red radiant gas heater that can be used to protect concrete from freezing is being marketed by Perfection Stove Co. The heater uses L-P gas cylinders and can be used as a portable or a stationary unit.—*Perfection Stove Co., 7699 Platt Ave., Cleveland 4, Ohio.*

Tractor book

Caterpillar Tractor Co. has published a 104-page, hardbound book, "50 Years on Tracks," to commemorate the company's 50th anniversary. It is a pictorial history of the tractor and the company. Some of the photographs are more than 60 years old. The book is distributed through the company's dealers at $1.25 per copy.—*Caterpillar Tractor Co., Peoria, Ill.*

ASTM standards

American Society for Testing Materials has issued its 1954 Supplements to the 1952 Book of ASTM Standards. There are seven parts. Part 3 covers cement, concrete, ceramics, thermal insulation, road materials, waterproofing, and soils. The supplements are available in heavy covers at $3.50 per part or $24.50 for the set of seven.—*American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.*

Panel forms

Wide panel forms for low wall and grade beam construction are being offered by Symonds Clamp and Manufacturing Co. The forms are available in 6- and 8-ft lengths and widths of 30, 36, 42, and 48 in. Panels incorporate steel struts that allow ties to pass through the face permitting both inside and outside forms to be set up simultaneously.—*Symonds Clamp and Manufacturing Co., 4249 Diversey Ave., Chicago, Ill.*

Membership in the American Concrete Institute

To facilitate prospective members in joining the Institute, membership application forms are provided. Present Members may aid by bringing these forms to the attention of those who may profit from membership advantages. The grades of membership are described overleaf.

All who have an interest in concrete and a desire to improve it through a nonprofit educational service in gathering, correlating, and disseminating information on design, construction, manufacture, use, and maintenance of concrete structures and products are eligible for Institute membership.

There are many opportunities in the Institute for technical committee activity, contributions from your experience in technical papers and the briefer "Letters from Readers" section, and in reviewing technical literature. Thus you can help further ACI's aim "to provide a comradeship in finding the best ways to do concrete work of all kinds and in spreading that knowledge," and at the same time benefit from the experiences of other Members.

(cut here)

Board of Direction, American Concrete Institute
18263 W. McNichols Road
Detroit 19, Michigan

Date _____

Individual Members, North America and U. S. Possessions	**$15.00**
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(Subject to stipulations of Bylaws—Article I on reverse side. Bylaws on request.)

Of the annual dues, $12.00 is for the JOURNAL of the American Concrete Institute (except that dues for Junior and Student Members apply in full for the JOURNAL).

The undersigned hereby applies for _____ **membership**
(Individual, Corporation, Contributing, Junior, Student)

in the American Concrete Institute. Proposed by _____

For Corporation Membership, ACI representative will be _____

_____ _____
(Date of graduation if Student) (Name, if Corporation)

Signature _____

For our records, please complete both sides of application.

EXCERPTS FROM BYLAWS: ARTICLE I—MEMBERS

Section 1. This Institute shall consist of Members, Corporation Members, Contributing Members, Junior Members, Student Members and Honorary Members interested in furthering the Institute's objects as set forth in its Charter.

Sec. 2. A Member shall be an individual.

A Corporation Member shall be a firm, corporation, society, agency of government or other organization. A Corporation Member shall name one individual as its representative who will enjoy all membership rights and privileges.

A Contributing Member shall be an individual, firm, corporation, society, agency of government or other organization wishing to give larger support to Institute activities through the payment of larger dues. Contributing Members, other than individuals, shall name representatives as do Corporation Members.

A Junior Member shall be a person less than 28 years old.

A Student Member shall be less than 28 years old and a student in residence at a recognized technical or engineering school.

An Honorary Member shall be a person of eminence in the field of the Institute's interest, or one who has performed extraordinarily meritorious service to the Institute.

Sec. 3. All classes of Members except Honorary Members and Student Members, shall be proposed by at least one Member of the Institute and elected by a two-thirds vote of the Board of Direction. An Honorary Member shall be elected by unanimous vote of the Board of Direction. A Student Member shall be proposed by a member of his school's faculty, who need not be a Member of the Institute, and elected by a two-thirds vote of the Board of Direction.

Sec. 4. All Members shall have all rights and privileges of membership as determined by the Board of Direction except that a Junior or Student Member shall not vote nor hold office. The status of a Student Member shall change automatically to that of Junior Member on the first anniversay of his membership succeeding the date on which he ceases to be a student in residence. The status of a Junior Member shall be changed to that of Member on the first anniversary of his membership after he becomes 28 years of age.

Sec. 5. Applications for and resignations from Membership and requests for change of representatives of Corporation or Contributing Memberships shall be presented in writing to the Secretary-Treasurer. Resignations may be accepted only from Members whose dues are not more than 60 days in arrears, except by special action of the Board of Direction.

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DISCUSSION

Discussion closed January 1, 1955

Sept. Jl. '54

Specification for the Design and Construction of Reinforced Concrete Chimneys (ACI 505-54)—ACI Committee 505

Recommended Practice for Selecting Proportions for Concrete (ACI 613-54)—ACI Committee 613

Properties of Heavy Concrete Made with Barite Aggregates—L. P. Witte and J. E. Backstrom

One-Piece Reinforced Plastic Forms for Assembly Line Production of Thin-Shell Concrete Roof Sections—George P. Duecy and John L. Hutsell

Discussion closed February 1, 1955

Oct. Jl. '54

Admixtures for Concrete—ACI Committee 212

Precast Concrete Sandwich Panels for Tilt-Up Construction—F. Thomas Collins

Production of Sand and Gravel—Stanton Walker

Ultimate Strength in Shear of Simply-Supported Prestressed Concrete Beams Without Web Reinforcement—E. M. Zwoyer and C. P. Siess

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Discussion closed March 1, 1955

Nov. Jl. '54

Model Analysis of a Skewed Rigid Frame Bridge and Slab—D. H. Pletta and D. Frederick

Fundamental Factors in the Drying Shrinkage of Concrete Block—George L. Kalousek

Test Hammer Provides New Method of Evaluating Hardened Concrete—Gordon W. Greene

Ultimate Load Theory and Tests of Cylindrical Long Shell Roofs—G. C. Ernst, R. R. Marlette, and G. V. Berg

"Accidental" Air in Concrete—M. F. Macnaughton and John B. Herbich

Permeability of Portland Cement Paste—T. C. Powers, L. E. Copeland, J. C. Hayes, and H. M. Mann

Discussion closed April 1, 1955

Dec. Jl. '54

Shear Strength of Reinforced Concrete Beams. Part 1—Tests of Simple Beams*—K. G. Moody, I. M. Viest, R. C. Elstner, and E. Hognestad

Effect of Algae Infested Water on the Strength of Concrete—Benjamin C. Doell

Observations on the Resistance of Concrete to Freezing and Thawing—Hubert Woods

Some Failures of Reinforced Concrete Storage Bins—Louis E. Vandegrift

Static and Fatigue Tests on Partially Prestressed Concrete Constructions—Paul William Abeles

*Discussion considered on the basis of the entire series (four parts) closes July 1, 1955.

Discussion closed May 1, 1955

Jan. Jl. '55

Structural Applications of Hyperbolic Paraboloidical Shells—Felix Candela

Shear Strength of Reinforced Concrete Beams. Part 2—Tests of Restrained Beams Without Web Reinforcement*—K. G. Moody, I. M. Viest, R. C. Elstner, and E. Hognestad

Simplified Method for the Determination of Apparent Surface Area of Concrete Products—L. F. Gleysteen and G. L. Kalousek

Design and Construction of a Folded Plate Roof Structure—Milo S. Ketchum

Ribless Cylindrical Shells—Mario G. Salvadori and A. D. Ateshoglou

Comparison of Results of Three Methods for Determining Young's Modulus of Elasticity of Concrete—R. E. Philleo

Discussion closes June 1, 1955

Feb. Jl. '55

An Interpretation of Some Published Researches on the Alkali-Aggregate Reaction. Part 1—The Chemical Reactions and Mechanism of Expansion—T. C. Powers and H. H. Steinour

Special Purpose Waterfront Structure of Precast Reinforced Concrete—Win E. Wilson

Shear Strength of Reinforced Concrete Beams. Part 3—Tests of Restrained Beams With Web Reinforcement*—R. C. Elstner, K. G. Moody, I. M. Viest, and E. Hognestad

Magnetite Iron Ore Concrete for Nuclear Shielding—J. O. Henri

Flat Slab Solved by Model Analysis—Gerald Bowen and R. W. Shaffer

Fly Ash–Sulfur Mixture for Capping Concrete Test Cylinders—Hubert F. McDonell

Discussion closes July 1, 1955

Mar. Jl. '55

Design of Blast Resistant Construction for Atomic Explosions—C. S. Whitney, B. G. Anderson, and E. Cohn

Vibro-Cast Concrete Pipe for San Diego Project—S. J. Turley

Shear Strength of Reinforced Concrete Beams. Part 4—Analytical Studies*—K. G. Moody and I. M. Viest

Discussion closes August 1, 1955

Apr. Jl. '55

Looking Ahead—Charles H. Scholer

Theory of the Secondary Arch—B. F. Jakobsen

Prefabricated Factory Construction in Denmark—R. A. Larsen and Vagn Ussing

Strength Variations in Ready-Mixed Concrete—A. E. Cummings

Balanced Design of Prestressed Concrete Beams—Henry J. Cowan

An Interpretation of Some Published Researches on the Alkali-Aggregate Reaction. Part 2—A Hypothesis Concerning Safe and Unsafe Reactions with Reactive Silica in Concrete—T. C. Powers and H. H. Steinour

Discussion closes September 1, 1955

May Jl. '55

Effect of Curing on the Properties Affecting Shrinkage Cracking of Concrete Block—G. W. Washa, J. C. Saemann, and C. Warren

Performance of Reinforced Concrete and Concrete Masonry in Recent Western United States Earthquakes—Karl V. Steinbrugge and Donald F. Moran

Behavior of Prestressed Concrete Composite Beams—R. H. Evans and A. S. Parker

Ball Test for Field Control of Concrete Consistency—J. W. Kelly and Milos Polivka

Strength of Reinforced Concrete T-Beams Under Combined Direct Shear and Torsion—Earl I. Brown, II

Air Entrainment in Cement and Silica Pastes—G. M. Bruere

Eccentric Bending in Two Directions of Rectangular Concrete Columns—Lu-Shien Hu

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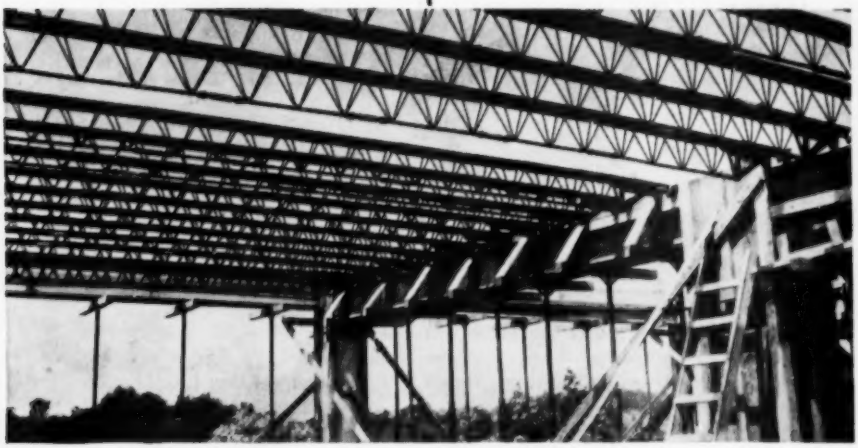

Buildings for N. Y. State College of Agriculture and N. Y. State Veterinary College, Cornell University, Ithaca, N. Y. State Architect: Cornelius J. White. Consulting Architects: Coffin & Coffin, Isadore Rosenfield. Contractor: W. E. O'Neil Construction Co.

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